

ABSTRACT OF THE DISCLOSURE

In an apparatus for separating semiconductor chips, a semiconductor wafer stuck to an adhesive sheet with its silicon mirror surface facing downwards is sucked as a whole through its circuit surface side by means of a sucker plate capable of sucking the whole of wafer. In order to separate the sheet from a frame fixing the sheet while the sheet being sucked, the sheet is cut by a cutter edge so as to be separated from the frame. To separate the sheet from the wafer, the wafer top surface is guided by a guide plate having a tip angle of 15° and by causing the sheet to profile the tip of the guide plate, the sheet is peeled off in a direction making an angle of 45° to the dicing direction on the wafer.